MRI-1000

Remote Meter Reading Interface

User Manual

GS-09-1304

Version 1.0
March 30, 2009

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Introduction

Scope

This document describes how to access an MRI-1000 system which has been connected to a modem equipped power meter.

Revision History

Rev No.	Date Issued	Comments
1.0	March 30, 2009	Initial release

Contact Information

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Safety Information

FCC Notice

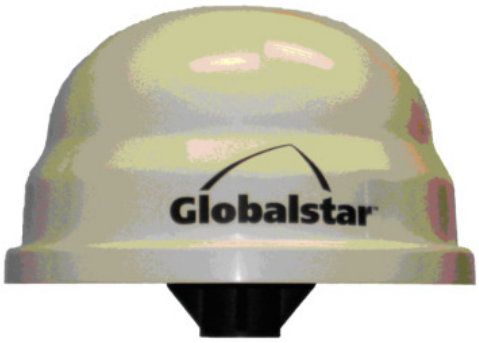
This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their expense.

Product Description

The MRI-1000 system provides a satellite-based path to read a modem equipped power meter such as the GE kV2c. The system consists of

1. an Outdoor Unit which is mounted high above obstacles so as to provide an unobstructed view of the sky
2. a Junction Box which connects to the Power Meter.

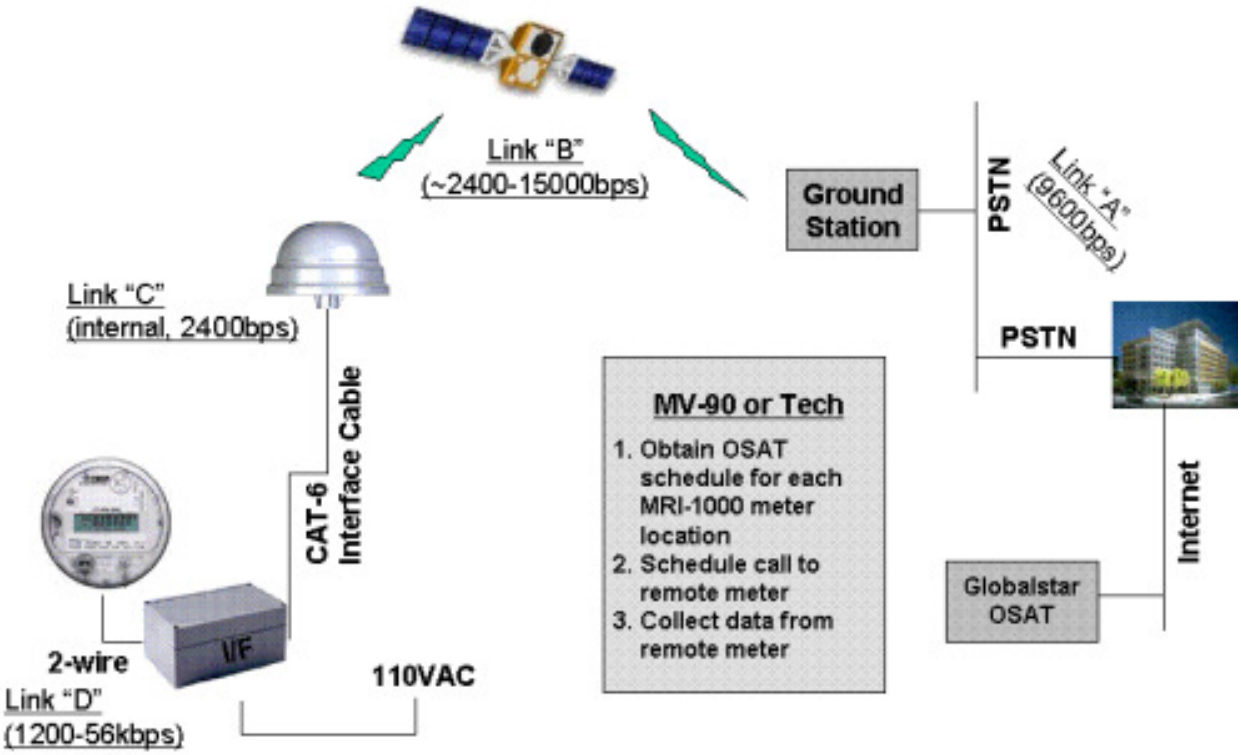
Outdoor Unit



Junction Box

The Junction Box provides a single point to attach the modem line from the Meter, as well as 110vac to power the system. A single CAT-5/6 cable carries the modem data and power to the Outdoor Unit which houses the satellite modem. An external system, such as an MV-90, can retrieve meter information by calling the phone number of the Satellite Modem. A telephone modem connection is established between the Power Meter and the external system as if the meter was connected to the PSTN.

Operational Concept



User Instructions

The purpose of the MRI-1000 is to provide the user with the ability to interface to an Electrical Power Meter Measuring device to gather data for billing (and other) purposes over a Globalstar Satellite, thus eliminating the need for a technician to physically perform these functions at the installed Meter location.

The first step is to ensure the MRI-1000 has been installed in accordance with installation manual GS-08-1274 and the initial system checkout has been completed as described in the installation manual. The next step is to establish a User session with the meter via the Globalstar Satellite Constellation for the purpose of retrieving the stored data from the Meter. In order to successfully complete a Meter connect and readout session the user should have run the Globalstar OSAT tool for the location of where the Meter is installed, and selected a time period which covers the test period. This will ensure that the MRI-1000 will be in view of a satellite during the test period.

Prior to establishing a Meter readout session it is essential that the MRI-1000 can be dialed into over a PSTN connection via a Globalstar satellite. To ensure that this link is functioning, dial the 10 digit MDN assigned to the MRI-1000 from any active phone. This should not be attempted unless the MRI-1000 at the remote location has view of a Globalstar satellite as determined by the OSAT Tool. When you dial the MDN from any phone, the calling party should hear the unit ringing, followed by an answer in the form of Modem Training Tones. Once this has been completed, the caller will hear a steady screeching sound indicating that the MRI-1000 has connected to the incoming call. Hang up and wait 2 minutes for the MRI and the meter to reset. An actual readout session can now be completed with a reasonable assurance of success.

The user will require a Meter reading application program on a PC or laptop computer such as “MeterMate” as used by some of the MRI-1000 Customers for reading the GE kV2c meters. This software needs to have the capability to initiate an asynchronous data call over the PSTN to the MRI-1000.

The following sequences would represent a typical call set up flow between the User Application software the MRI-1000, Globalstar Satellite and the Globalstar Gateway. It can be broken down into a series of links – A,B,C,D – as follows:

MeterMate PC ➔ (A) ➔
➔ 10-digit phone number of the MRI at the Globalstar Gateway ➔
➔ (B) ➔ G* Satellite modem in the MRI-1000 ➔
➔ (C) ➔ Analog modem chip in the MRI-1000 ➔
➔ (D) ➔ Modem card in the kV2c

(A) is a 9600bps link
(B) usually runs at about 8000bps. This can vary from 2400bps to about 15,000bps depending on signal strength and compression

(C) runs at 2400bps
(D) runs at whatever the meter negotiates with the MRI-1000. We usually recommend 2400bps so you have the fastest transaction times

When MeterMate connects to a kV2c meter, it reports the speed of link (D), so it may report 1200bps or 2400bps even though the actual connection speed of Link A, the link between the MeterMate PC and the gateway, is 9600bps. If you were to use HyperTerminal to connect to the MRI's phone number at the gateway, you would be able to confirm that the speed of (A) is 9600bps.

As soon as the A-B-C-D chain of links is established, your MeterMate PC is talking directly to the meter just as if it were connected to a landline phone. You never have to worry about the establishment of the chain of links.

It is suggested that if the MRI-1000 User has several remotely located Meter installations, that he run the Globalstar OSAT tool for each remote location and, based on the predicted service windows of each, select the best time to perform the Meter readout session.

If the Meter Readout session was not successful try to determine the cause of the failure. If the call over the PSTN from a standard phone did not result in the connection being completed, Call Globalstar Customer Care to determine the status of the Subscription. Customer Care can be reached be calling 1-877-452-5782.

Customer Care/Warranty

Call Customer Care (1-877-452-5782) for all Subscription Related and Warranty Issues. The ESN and MDN numbers of the unit of concern along with the Subscriber Account Name will be required

The MRI-1000 comes with the following Globalstar Product Warranty.

LIMITED WARRANTY. Globalstar provides a one (1) year Limited Product Warranty that the Meter Reading Interface (MRI) Terminal (the "Terminal") shall be free from defects in workmanship and materials under normal use and service. Globalstar's obligation under this warranty is limited to repairing and replacing, at Globalstar's election, any Terminal, that within twelve (12) months of initial date of shipment is determined to be defective in material or workmanship upon examination by Globalstar, without charge for parts or labor. Globalstar reserves the right to use new or refurbished parts and/or then-current technology for any repairs/replacements, provided that they maintain form, fit, function compatibility. Customer is to provide Globalstar with notice of the defect, including all reasonable available details regarding the nature of the nonconformity or defect, and request a Returned Merchandise Authorization. Any Terminal must be returned to Globalstar; no field repairs will be performed. This warranty shall not apply to repair or replacement necessitated by accident, disaster, customer supplied interfacing,

unauthorized modification or repairs, misuse or abuse. Except where prohibited by law, any Terminal or part replaced under warranty by Globalstar shall become the property of Globalstar. The performance of this limited warranty does not extend the warranty period for any Terminal beyond the original limited warranty period. ALL OTHER STATUTORY AND IMPLIED WARRANTIES (INCLUDING IMPLIED WARRANTY OF MERCHANTIBILITY AND FITNESS FOR A PARTICULAR PURPOSE) ARE EXCLUDED except warranty of title.

For Warranty Issues contact Customer Care